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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/665,294 | 09/22/2003 | I-Ming Lin | TOP 323 | 5631 |
| 23995 | 7590 | 10/04/2004 | EXAMINER | |
| RABIN & Berdo, PC 1101 14TH STREET, NW SUITE 500 WASHINGTON, DC 20005 | | | TON, MY TRANG | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2816 | |

DATE MAILED: 10/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/665,294

Applicant(s)

LIN, I-MING

Examiner

My-Trang N. Ton

Art Unit

2816

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 9, 11-15 is/are rejected.
- 7) ☒ Claim(s) 8, 10 and 16 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 12/19/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1/ Claims 1-2, 4, 6-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Nguyen (U.S Patent No. 6,014,042).

Nguyen discloses in Figs. 5, 7-9 a phase detector circuit including:

Regarding claim 1:

a detection circuit (56-58) for receiving as input first and second clocks ($\phi 1, \phi 2$) and generating as output a compare signal (N, P); and

a sampling circuit (54), according to said compare signal (N, P), for asserting an output signal indicative of skew existing between the first and second clocks ($\phi 1, \phi 2$).

Regarding claim 2: the first clock ($\phi 1$) is transmitted with a differential signaling scheme (see Figs. 7 and 9).

Regarding claim 4: the second clock ($\phi 2$) is transmitted with the differential signaling scheme.

Regarding claim 6: the width of the compare signal (N, P) generated by the detection circuit (56-58) is substantially proportional to an amount of the skew between the first and second clocks ($\phi 1, \phi 2$).

Regarding claim 7: the sampling circuit (54) samples the compare signal (N,P) at a predetermined frequency such that the output signal is set to indicate the amount of the skew between the first and second clocks ($\phi 1, \phi 2$).

2/ Claims 1-7, 9 and 11-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Bush (U.S Patent No. 3,991,322).

Bush et al discloses in Figs. 1-2 a signal delay apparatus including:

Regarding claim 1:

a detection circuit (10, 36) for receiving as input first and second clocks (32, 34) and generating as output a compare signal (18, 22); and

a sampling circuit (20), according to said compare signal (18, 22), for asserting an output signal indicative of skew existing between the first and second clocks (32, 34).

Regarding claim 2: the first clock (32) is transmitted with a differential signaling scheme (see Fig. 2).

Regarding claim 3, element 40 (inside element 10, Fig. 2) reads on a first differential-to-single-ended converter receiving the first clock (32), for providing the detection circuit with a version of the first clock converted into a single-ended signaling scheme.

Regarding claim 4: the second clock (34) is transmitted with the differential signaling scheme (see Fig. 2).

Regarding claim 5, element 64 (inside element 36, Fig. 2) reads on a second differential-to-single-ended converter receiving the second clock (34), for providing the

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detection circuit with a version of the second clock converted into a single-ended signaling scheme.

Regarding claim 6: the width of the compare signal (18, 22) generated by the detection circuit (10, 36) is substantially proportional to an amount of the skew between the first and second clocks (32, 34).

Regarding claim 7: the sampling circuit (20) samples the compare signal (18, 22) at a predetermined frequency such that the output signal is set to indicate the amount of the skew between the first and second clocks (32, 34).

Regarding claim 9:

a first IC chip (28) operating on a first clock (30) and providing as output the first clock (30 via 32); and

a second IC chip (36, 10, 20) operating on a second clock (34), comprising:

a detection circuit (10, 36) for receiving as input the first and second clocks (30 via 32, 34) and generating as output a compare signal (18, 22); and

a sampling circuit (20), according to said compare signal (18, 22), for asserting an output signal indicative of skew existing between the first and second clocks (30 via 32, 34);

wherein the width of the compare signal (18, 22) is substantially proportional to an amount of the skew between the first and second clocks (30 via 32, 34).

Claims 11-15 are similarly rejected as claims 2-7.

Allowable Subject Matter

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Claims 8, 10 and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to My-Trang N. Ton whose telephone number is 571-272-1754. The examiner can normally be reached on 7:00 a.m - 5:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Callahan can be reached on 571-272-1740. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



**MY-TRANG NUTON
PRIMARY EXAMINER**

September 30, 2004